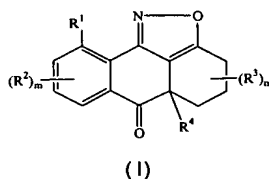


**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. **(Currently Amended)** A production process for producing a polycyclic ketone compound ~~of represented by~~ the following Formula (I):



(wherein R<sup>1</sup> ~~represents~~ is a hydrogen atom, a hydroxyl group, a halogen atom, a silyloxy group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkoxy group which may be substituted or a C<sub>1</sub> to C<sub>20</sub> hydrocarbon group which may be substituted;

R<sup>2</sup> may be independent from each other and the same as or different from each other and ~~represents~~ is a halogen atom, a hydroxyl group, a cyano group, a nitro group, an amino group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkoxy group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> acyl group which may be substituted, a C<sub>1</sub> to C<sub>20</sub> hydrocarbon group which may be substituted or a heterocyclic group of a 5- to 7-membered ring which may be substituted or two groups of R<sup>2</sup> form a hydrocarbon group of a 4- to 6-membered ring which may be substituted together with adjacent carbon atoms;

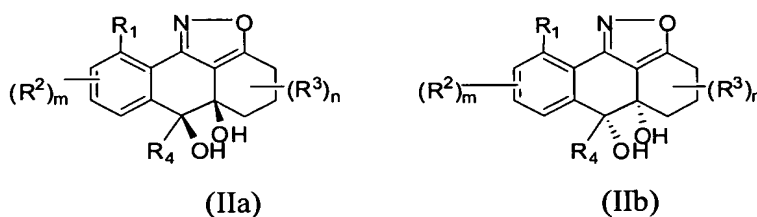
R<sup>3</sup> may be independent from each other and the same as or different from each other and ~~represents~~ is a halogen atom, a hydroxyl group, a C<sub>1</sub> to C<sub>10</sub> alkoxycarbonyl group which may be substituted or a C<sub>6</sub> to C<sub>20</sub> hydrocarbon group which may be substituted or two groups of R<sup>3</sup> form a hydrocarbon group of a 4- to 6-membered ring which may be substituted together with adjacent carbon atoms;

R<sup>4</sup> ~~represents~~ is a hydrogen atom, a halogen atom, a cyano group, a nitro group, an amino group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkoxy group which may be substituted, a

C<sub>1</sub> to C<sub>10</sub> acyl group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkyl group which may be substituted, a phenyl group which may be substituted or a C<sub>1</sub> to C<sub>20</sub> hydrocarbon group which may be substituted;

m ~~represents~~ is an integer of 0 to 3; and n ~~represents~~ is an integer of 0 to 6),

wherein a compound ~~represented by~~ of the following Formula (IIa) or (IIb) is treated under an acidic condition:



(wherein R<sup>1</sup>, R<sup>2</sup>, R<sup>3</sup>, R<sup>4</sup>, m and n are the same as those defined in Formula (I) ~~described above~~).

2. **(Currently Amended)** The production process as described in claim 1, wherein the treatment ~~described above~~ is carried out in the presence of a catalyst.

3. **(Currently Amended)** The production process as described in claim ~~[[1]]~~ 2, wherein the catalyst ~~described above~~ is selected from Lewis acids, protonic acids and mixtures thereof.

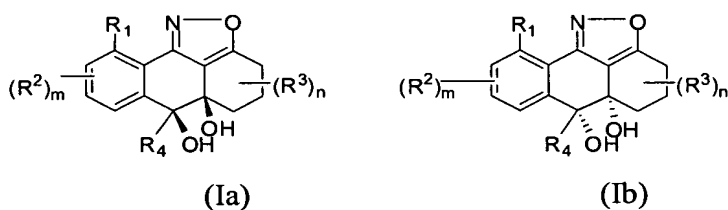
4. **(Currently Amended)** The production process as described in claim 3, wherein the protonic acid ~~described above~~ is selected from mineral acids such as ~~hydrogen chloride~~, alkanesulfonic acids, carboxylic acids and mixtures thereof.

5. **(Original)** The production process as described in claim 1, wherein the treatment is carried out at a temperature of -78 to 150°C for 0.1 to 50 hours.

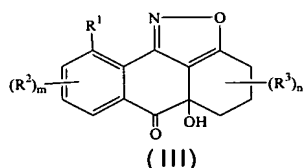
6. **(Original)** The production process as described in claim 1, wherein the treatment is carried out at a temperature of -30 to 40°C for 1 to 20 hours.

7. **(Currently Amended)** The production process as described in claim 1, wherein the treatment is carried out in the presence of a solvent which ~~solvent described above~~ is selected from methanol, ethanol, tetrahydrofuran, diethyl ether, dichloromethane, chloroethylene, dichloroethylene, chloroform, benzene, toluene, acetonitrile, N,N-dimethylformamide and dimethyl ketone, water, 1,4-dioxane, 1,2-dimethoxyethane and mixtures thereof.

8. **(Withdrawn)** A production process for producing a compound represented by the following Formula (IIa) or (IIb):



(wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ ,  $m$  and  $n$  are the same as described below) using a production process in which a compound represented by the following Formula (III):



(wherein  $R^1$  represents a hydrogen atom, a hydroxyl group, a halogen atom, a silyloxy group which may be substituted, a  $C_1$  to  $C_{10}$  alkoxy group which may be substituted or a  $C_1$  to  $C_{20}$  hydrocarbon group which may be substituted;

$R^2$  may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group, a cyano group, a nitro group, an amino group which may be substituted, a  $C_1$  to  $C_{10}$  alkoxy group which may be substituted, a  $C_1$  to  $C_{10}$  acyl group which may be substituted, a  $C_1$  to  $C_{20}$  hydrocarbon group which may be substituted or a heterocyclic group of a 5- to 7-membered ring which may be substituted or two groups of  $R^2$  form a hydrocarbon group of a 4- to 6-membered ring which may be substituted together with adjacent carbon atoms;

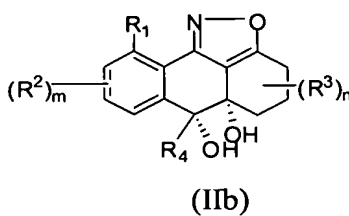
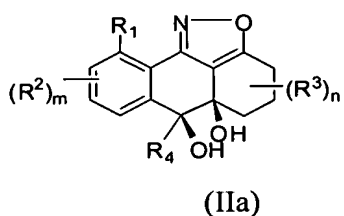
$R^3$  may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group, a  $C_1$  to  $C_{10}$  alkoxy carbonyl group which may be substituted or a  $C_6$  to  $C_{20}$  hydrocarbon group which may be substituted or two groups of  $R^3$  form a hydrocarbon group of a 4- to 6-membered ring which may be substituted together with adjacent carbon atoms;

m represents an integer of 0 to 3; and n represents an integer of 0 to 6) is treated under the presence of a compound represented by the following Formula (IV):



(wherein M represents metal, and  $R^4$  represents a hydrogen atom, a halogen atom, a cyano group, a nitro group, an amino group which may be substituted, a  $C_1$  to  $C_{10}$  alkoxy group which may be substituted, a  $C_1$  to  $C_{10}$  acyl group which may be substituted, a  $C_1$  to  $C_{10}$  alkyl group which may be substituted, a phenyl group which may be substituted or a  $C_1$  to  $C_{20}$  hydrocarbon group which may be substituted).

9. **(Withdrawn)** The production process as described in claim 8, wherein the compound represented by the following Formula (IIa) or (IIb) is obtained in the form of a single isomer:



(wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , m and n are the same as described above).

10. **(Withdrawn)** The production process as described in claim 7, wherein the compound represented by Formula (IIa) or (IIb) (wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , m and n are the same as described above) described above is produced by treatment carried out at a temperature of -120 to 40°C for 0.01 to 5 hours.

11. **(Withdrawn)** The production process as described in claim 8, wherein the compound represented by Formula (IIa) or (IIb) described above (wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , m and n are the same as described above) is treated at a temperature of -100 to -20°C for 0.05 to 1 hour.

12. **(Withdrawn)** The production process as described in claim 8, wherein in the production of the compound represented by Formula (IIa) or (IIb) described above (wherein  $R^1$ ,  $R^2$ ,  $R^3$ ,  $R^4$ , m and n are the same as described above), the solvent described above is selected from methanol, ethanol, tetrahydrofuran, diethyl ether, dichloromethane, chloroethylene, dichloroethylene, chloroform, benzene, toluene, acetonitrile, N,N-dimethylformamide and dimethyl ketone, water, 1,4-dioxane, 1,2-dimethoxyethane and mixtures thereof.

13. **(Currently Amended)** The production process as described in claim 1 ~~or 8~~, wherein  $R^1$  ~~represents~~ is a hydrogen atom, a hydroxyl group, a halogen atom, a silyloxy group which may be substituted or a  $C_1$  to  $C_{10}$  alkoxy group which may be substituted;

$R^2$  may be independent from each other and the same as or different from each other and ~~represents~~ is a halogen atom, a hydroxyl group, a cyano group, a nitro group, an amino group which may be substituted, a  $C_1$  to  $C_{20}$  hydrocarbon group which may be substituted, a  $C_1$  to  $C_{10}$  alkoxy group which may be substituted or a  $C_1$  to  $C_{10}$  acyl group which may be substituted or two groups of  $R^2$  form a hydrocarbon group of a 5- to 6-membered ring which may be substituted together with adjacent carbon atoms;

$R^3$  may be independent from each other and the same as or different from each other and ~~represents~~ is a halogen atom, a hydroxyl group, a  $C_1$  to  $C_5$  alkoxycarbonyl group which may be substituted or a  $C_1$  to  $C_{10}$  alkyl group which may be substituted or two groups of  $R^3$  form a hydrocarbon group of a 5- to 6-membered ring which may be substituted together with adjacent carbon atoms;

$R^4$  ~~represents~~ is a hydrogen atom, a halogen atom, an amino group which may be substituted, a  $C_1$  to  $C_{10}$  alkoxy group which may be substituted, a  $C_1$  to  $C_{10}$  acyl group which may be substituted, a  $C_1$  to  $C_{10}$  alkyl group which may be substituted, a  $C_1$  to  $C_{10}$  alkenyl

group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkynyl group which may be substituted or a phenyl group which may be substituted;

~~M represents metal;~~

m ~~represents~~ is an integer of 0 to 2; and n ~~represents~~ is an integer of 0 to 4.

14. **(Currently Amended)** The production process as described in claim 1 ~~or 8~~, wherein R<sup>1</sup> ~~represents~~ is a hydrogen atom, a hydroxyl group, a halogen atom, a silyloxy group which may be substituted, a C<sub>1</sub> to C<sub>5</sub> alkoxy group or a C<sub>1</sub> to C<sub>5</sub> alkoxy C<sub>1</sub> to C<sub>5</sub> alkoxy group;

R<sup>2</sup> may be independent from each other and the same as or different from each other and ~~represents~~ is a halogen atom, a hydroxyl group, a cyano group, a nitro group, an amino group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkyl group which may be substituted or a C<sub>1</sub> to C<sub>10</sub> alkoxy group which may be substituted or two groups of R<sup>2</sup> form a hydrocarbon group of a 6-membered ring together with adjacent carbon atoms;

R<sup>3</sup> may be independent from each other and the same as or different from each other and ~~represents~~ is a halogen atom, a hydroxyl group or a C<sub>1</sub> to C<sub>10</sub> alkyl group which may be substituted or two groups of R<sup>3</sup> form a hydrocarbon group of a 6-membered ring together with adjacent carbon atoms;

R<sup>4</sup> ~~represents~~ is a hydrogen atom, a halogen atom, an amino group which may be substituted, a C<sub>1</sub> to C<sub>5</sub> alkoxy group which may be substituted, a C<sub>1</sub> to C<sub>5</sub> acyl group which may be substituted, a C<sub>1</sub> to C<sub>5</sub> alkyl group which may be substituted, a C<sub>1</sub> to C<sub>5</sub> alkenyl group which may be substituted, a C<sub>1</sub> to C<sub>5</sub> alkynyl group which may be substituted or a phenyl group which may be substituted;

~~M represents lithium, magnesium, sodium, potassium or zinc;~~

m ~~represents~~ is 0 or 1; and n ~~represents~~ is an integer of 0 to 3.

15. **(Currently Amended)** The production process as described in claim 1 ~~or 8~~, wherein R<sup>1</sup> ~~represents is~~ is a hydroxyl group, a halogen atom, a silyloxy group which may be substituted, methoxy or methoxymethoxy;

R<sup>2</sup> may be independent from each other and the same as or different from each other and ~~represents is~~ is a halogen atom, a hydroxyl group, a cyano group, a nitro group, an amino group, a C<sub>1</sub> to C<sub>3</sub> alkyl group or a C<sub>1</sub> to C<sub>3</sub> alkoxy group which may be substituted or two groups of R<sup>2</sup> form a condensed benzene ring together with adjacent carbon atoms;

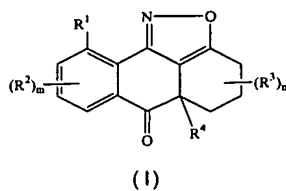
R<sup>3</sup> may be independent from each other and the same as or different from each other and ~~represents is~~ is a halogen atom, a hydroxyl group or a C<sub>1</sub> to C<sub>3</sub> alkyl group which may be substituted or two groups of R<sup>3</sup> form a condensed cyclohexyl ring together with adjacent carbon atoms;

R<sup>4</sup> ~~represents is~~ is a C<sub>1</sub> to C<sub>3</sub> alkyl group which may be substituted, a vinyl group, a phenyl group or a tolyl group;

~~M represents lithium;~~

m ~~represents is~~ is 0 or 1; and n ~~represents is~~ is 0 or 1.

16. **(Withdrawn)** A polycyclic ketone compound represented by the following Formula (I):



(wherein R<sup>1</sup> represents a hydrogen atom, a hydroxyl group, a halogen atom, a silyloxy group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkoxy group which may be substituted or a C<sub>1</sub> to C<sub>20</sub> hydrocarbon group which may be substituted;

R<sup>2</sup> may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group, a cyano group, a nitro group, an amino

group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkoxy group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> acyl group which may be substituted, a C<sub>1</sub> to C<sub>20</sub> hydrocarbon group which may be substituted or a heterocyclic group of a 5- to 7-membered ring which may be substituted or two groups of R<sup>2</sup> form a hydrocarbon group of a 4- to 6-membered ring which may be substituted together with adjacent carbon atoms;

R<sup>3</sup> may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group, a C<sub>1</sub> to C<sub>10</sub> alkoxycarbonyl group which may be substituted or a C<sub>6</sub> to C<sub>20</sub> hydrocarbon group which may be substituted or two groups of R<sup>3</sup> form a hydrocarbon group of a 4- to 6-membered ring which may be substituted together with adjacent carbon atoms;

R<sup>4</sup> represents a hydrogen atom, a halogen atom, a cyano group, a nitro group, an amino group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkoxy group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> acyl group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkyl group which may be substituted, a phenyl group which may be substituted or a C<sub>1</sub> to C<sub>20</sub> hydrocarbon group which may be substituted; m represents an integer of 0 to 2; and n represents an integer of 0 to 4).

17. **(Withdrawn)** The polycyclic ketone compound as described in claim 16, wherein R<sup>1</sup> represents a hydrogen atom, a hydroxyl group, a halogen atom, a silyloxy group which may be substituted or a C<sub>1</sub> to C<sub>10</sub> alkoxy group which may be substituted; R<sup>2</sup> may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group, a cyano group, a nitro group, an amino group which may be substituted, a C<sub>1</sub> to C<sub>20</sub> hydrocarbon group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkoxy group which may be substituted or a C<sub>1</sub> to C<sub>10</sub> acyl group which may be substituted or two groups of R<sup>2</sup> form a hydrocarbon group of a 5- to 6-membered ring which may be substituted together with adjacent carbon atoms; R<sup>3</sup> may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group, a C<sub>1</sub> to C<sub>5</sub> alkoxycarbonyl group which may be substituted or a C<sub>1</sub> to C<sub>10</sub> alkyl group which may be substituted or two groups of R<sup>3</sup> form a hydrocarbon group of a 5- to 6-membered ring which may be substituted together with adjacent carbon atoms; R<sup>4</sup> represents a hydrogen atom, a halogen atom, an amino group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkoxy group which may

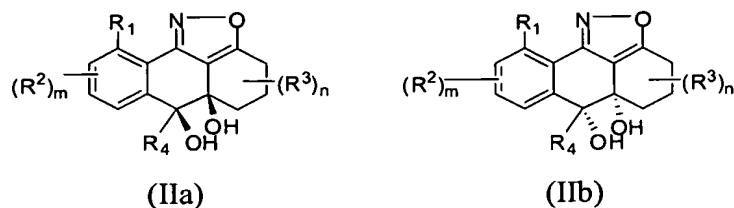


be substituted, a C<sub>1</sub> to C<sub>10</sub> acyl group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkyl group which may be substituted or a phenyl group which may be substituted; m represents an integer of 0 to 2; and n represents an integer of 0 to 4.

18. **(Withdrawn)** The polycyclic ketone compound as described in claim 16, wherein R<sup>1</sup> represents a hydrogen atom, a hydroxyl group, a halogen atom, a silyloxy group which may be substituted, a C<sub>1</sub> to C<sub>5</sub> alkoxy group or a C<sub>1</sub> to C<sub>5</sub> alkoxy C<sub>1</sub> to C<sub>5</sub> alkoxy group; R<sup>2</sup> may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group, a cyano group, a nitro group, an amino group which may be substituted, a C<sub>1</sub> to C<sub>10</sub> alkyl group which may be substituted or a C<sub>1</sub> to C<sub>10</sub> alkoxy group which may be substituted or two groups of R<sup>2</sup> form a hydrocarbon group of a 6-membered ring together with adjacent carbon atoms; R<sup>3</sup> may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group or a C<sub>1</sub> to C<sub>10</sub> alkyl group which may be substituted or two groups of R<sup>3</sup> form a hydrocarbon group of a 6-membered ring together with adjacent carbon atoms; R<sup>4</sup> represents a hydrogen atom, a halogen atom, an amino group which may be substituted, a C<sub>1</sub> to C<sub>5</sub> alkoxy group which may be substituted, a C<sub>1</sub> to C<sub>5</sub> acyl group which may be substituted, a C<sub>1</sub> to C<sub>5</sub> alkyl group which may be substituted or a phenyl group which may be substituted; m represents 0 or 1; and n represents an integer of 0 to 3.

19. **(Withdrawn)** The polycyclic ketone compound as described in claim 16, wherein R<sup>1</sup> represents a hydroxyl group, a halogen atom, a silyloxy group which may be substituted, methoxy or methoxymethoxy; R<sup>2</sup> may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group, a cyano group, a nitro group, an amino group or a C<sub>1</sub> to C<sub>3</sub> alkyl group or a C<sub>1</sub> to C<sub>3</sub> alkoxy group which may be substituted or two groups of R<sup>2</sup> form a condensed benzene ring together with adjacent carbon atoms; R<sup>3</sup> may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group or a C<sub>1</sub> to C<sub>3</sub> alkyl group which may be substituted or two groups of R<sup>3</sup> form a condensed cyclohexyl ring together with adjacent carbon atoms; R<sup>4</sup> represents a C<sub>1</sub> to C<sub>3</sub> alkyl group which may be substituted or a tolyl group; m represents 0 or 1; and n represents 0 or 1.

20. **(Withdrawn)** A polycyclic compound represented by the following Formula (IIa) or (IIb):



(wherein  $R^1$  represents a hydrogen atom, a hydroxyl group, a halogen atom, a silyloxy group which may be substituted, a  $C_1$  to  $C_{10}$  alkoxy group which may be substituted or a  $C_1$  to  $C_{20}$  hydrocarbon group which may be substituted;

$R^2$  may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group, a cyano group, a nitro group, an amino group which may be substituted, a  $C_1$  to  $C_{10}$  alkoxy group which may be substituted, a  $C_1$  to  $C_{10}$  acyl group which may be substituted, a  $C_1$  to  $C_{20}$  hydrocarbon group which may be substituted or a heterocyclic group of a 5- to 7-membered ring which may be substituted or two groups of  $R^2$  form a hydrocarbon group of a 4- to 6-membered ring which may be substituted together with adjacent carbon atoms;

$R^3$  may be independent from each other and the same as or different from each other and represents a halogen atom, a hydroxyl group, a  $C_1$  to  $C_{10}$  alkoxycarbonyl group which may be substituted or a  $C_6$  to  $C_{20}$  hydrocarbon group which may be substituted or two groups of  $R^3$  form a hydrocarbon group of a 4- to 6-membered ring which may be substituted together with adjacent carbon atoms;

$R^4$  represents a hydrogen atom, a halogen atom, a cyano group, a nitro group, an amino group which may be substituted, a  $C_1$  to  $C_{10}$  alkoxy group which may be substituted, a  $C_1$  to  $C_{10}$  acyl group which may be substituted, a  $C_1$  to  $C_{10}$  alkyl group which may be substituted, a phenyl group which may be substituted or a  $C_1$  to  $C_{20}$  hydrocarbon group which may be substituted;  $m$  represents an integer of 0 to 2; and  $n$  represents an integer of 0 to 4).